

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/001706

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. 7: B32B 27/32, 7/10; A23B 7/148; A23L 3/3418; B65D 81/20, 85/34; B65B 25/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WPAT, ESP@CE, USPTO: packaging, tie, permeable, impregnate, oxygen, sensor

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO1997/015436 A1 (INTERNATIONAL PAPER COMPANY) 1 May 1997 Whole Document	
A	US 4,415,520 A (WIGGINS et al) 15 November 1983 Whole document	
A	EP 0016614 B1 (THE STANDARD OIL COMPANY) 01 June 1983 Whole document	
X	WO 2002/038467 A1 (MITSUBISHI AUSTRALIA LIMITED) 16 May 2002 Page 1, line 29- page 10, line 7	56, 78

☒ Further documents are listed in the continuation of Box C


☒ See patent family annex

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
23 February 2005

Date of mailing of the international search report
28 FEB 2005

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/001706

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,799,495 A (GAST, Jr. et al.) 01 September 1998 Abstract, fig. 7	56, 78
X	WO 1996/018306 A2 (INSTTTUUTVOOR AGROTECHNOLOGISCH ONDERZOEK) 20 June 1996 Abstract, page 2, line 16- page 3, line 24	56,78
X	US 5,457,963 A (CAHILL-O'BRIEN et al) 17 October 1995 Abstract, column 2, line 1-38	56,78
X	WO 1991/015719 (TRANSFRESH CORPORATION) 17 October 1991 Abstract, pages 3-7	56,78

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/001706

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See extra sheet (Page 5)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
Group I : 1-17, 22-47, 50-55

Group IV: 56-94
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/001706

Supplemental Box

(To be used when the space in any of Boxes I to VIII is not sufficient)

Continuation of Box No: III

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept. In coming to this conclusion the International Searching Authority has found that there are different inventions as follows:

1. Claims 1-17, 22-47 and 50-55 are directed to a process of manufacturing a packaging material and a packaging material whereby pressure is applied to join a tie layer of molten polyolefin and a water-absorbent layer. It is considered that "applying pressure and molten polyolefin" comprises a first "special technical feature".
2. Claims 18-21 and 48 are directed to a process of manufacturing a packaging material and a packaging material whereby a layer of liquid water-and water vapour-impermeable and a water absorbent layer are joined together by applying an adhesive comprising an alpha cyanoacrylate or a liquid epoxy and amine. It is considered that "applying an adhesive comprising an alpha cyanoacrylate or a liquid epoxy and amine" comprises a second special technical feature.
3. Claims 49 is directed to a packaging material whereby a layer of liquid water-and water vapour-impermeable and a water absorbent layer are joined together using water-absorbent layer comprising cellulose fibres with certain specifications. It is considered that "the water-absorbent layer comprising cellulose fibres with certain specifications" comprises a third technical feature.
4. Claims 56 to 94 are directed to a system and method of controlling an oxygen concentration of an enclosed atmosphere containing respiring produce. It is considered that "oxygen concentration control" comprises a fourth special technical feature.

Since the abovementioned groups 1, 2, 3 and group 4 do not share any of the technical features identified, a "technical relationship" between the inventions, as defined in PCT rule 13.2 does not exist. Accordingly the international application does not relate to one invention or to a single inventive concept, *a priori*.

The group 1, group 2 and group 3 are not so linked as to form a single general inventive concept, that is, they do not have any common inventive features, which define a contribution over the prior art. The common concept linking together these groups of claims is the process of joining a layer of liquid water-and water vapour-impermeable and a water absorbent layer. However this concept is not novel in the light of:

US 5167652 A (MUELLER) 01 December 1992, see column 1, lines 55-62;

WO 94/03329 A1 (COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION) 17

February 1994, see page 4, line 14;

EP 0443402 B1 (KURARAY CO., Ltd) 15 July 1997, see column 4, lines 46-50;

EP 0356161 B1 (MITSUI TOATSU CHEMICALS INC.) 22 March 1995, see page 5, lines 23-27.

Therefore these claims lack unity *a posteriori*.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2004/001706

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
WO	9715436	AU	73285/96	BR	9611325	BR	9711087
		CA	2233578	CA	2254903	CN	1200695
		EP	0857103	EP	0902773	HK	1016539
		NO	981881	NZ	320541	US	5739460
		US	5959242	US	6101947	US	6110548
		US	6221187	US	6749702	WO	9745294
US	4415520	AU	55453/80	CA	1154219	DK	81280
		EP	0016614	JP	55124655	US	4359506
		ZA	8000914				
WO	0238467	AU	13671/02				
US	5799495						
WO	9618306	EP	0798962	NL	9402111	US	5791236
US	5457963	AU	20589/95	CN	1118759	EP	0687966
		JP	8000168	NZ	272173		
WO	9115719	AU	21627/92	AU	33736/93	AU	51563/90
		AU	51596/90	AU	74301/91	AU	77608/91
		BR	9007062	BR	9007063	BR	9106332
		CA	2026207	CA	2026213	CA	2059141
		CA	2103051	CA	2140678	CN	1055830
		EP	0447495	EP	0455738	EP	0457431
		EP	0511692	EP	0513860	EP	0514949
		EP	0524264	EP	0560413	EP	0587733
		EP	0610975	JP	11088185	JP	11145844
		NZ	237801	SG	47111	SG	47709
		SG	48247	SG	49891	SG	82549
		US	5109417	US	5142656	US	5222189
		US	5230038	US	5297236	US	5357594
		US	5872721	WO	9009022	WO	9009064
		WO	9116769	WO	9222137	ZA	9102658
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.							
END OF ANNEX							